



KNOWBEL

# KNOW BEL

ENLIGHTENING THE NOBLES!



*Cancer*  
AWARENESS MONTH



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# WELCOME !

To the 11<sup>th</sup> issue of KNOWBEL.

Here comes the latest edition of your favourite magazine, KNOWBEL. Dive into the world of fascinating articles, inspiring personalities, mind-blowing quizzes, adorable comics and a lot more. All it takes is the flip of a page.

We firmly believe that everyone must have access to information and hence, strive to include the choicest of material for you to dwell upon. Besides, we provide a wonderful platform for you to showcase your amazing talent. You can send us your creative work at [knowbel.science@gmail.com](mailto:knowbel.science@gmail.com).

Moreover, don't forget to participate in the quizzes and contests we host because who knows, you may be the next star to win some exciting prizes and a feature in our next issue. Do share this with your friends and family. A candle loses nothing by lighting up another one.  
Happy reading!

Stay home & Stay safe !

## SPECIAL THANKS TO

DR. APARNA DESHPANDE  
Faculty Advisor

# KNOWBEL

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*Enlightening the nobles!*

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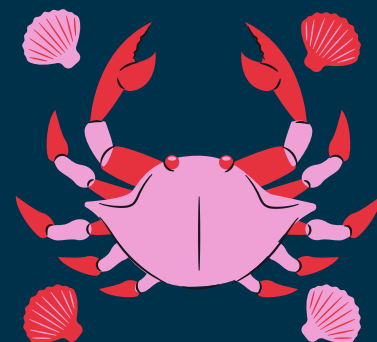


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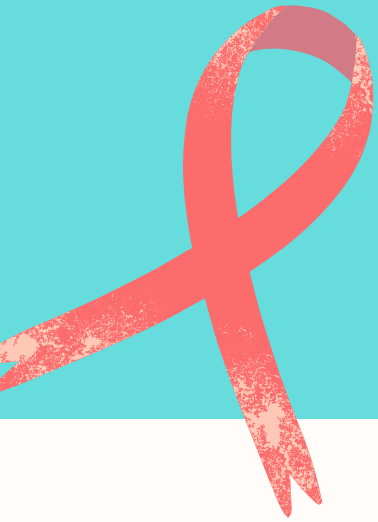
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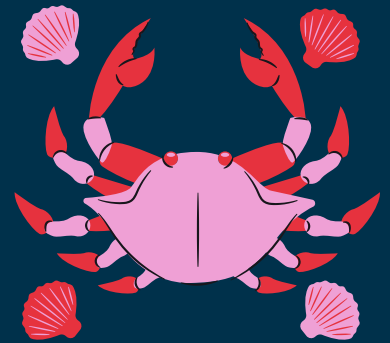


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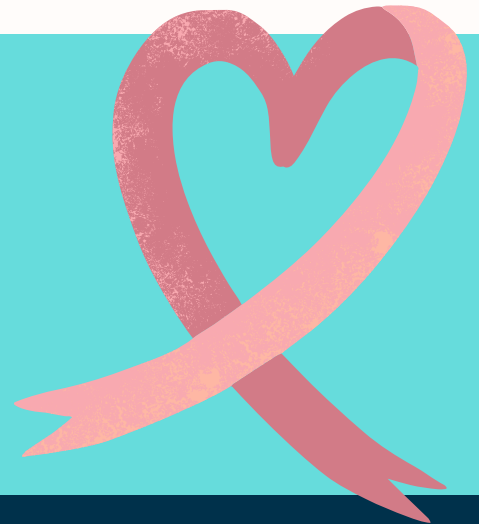


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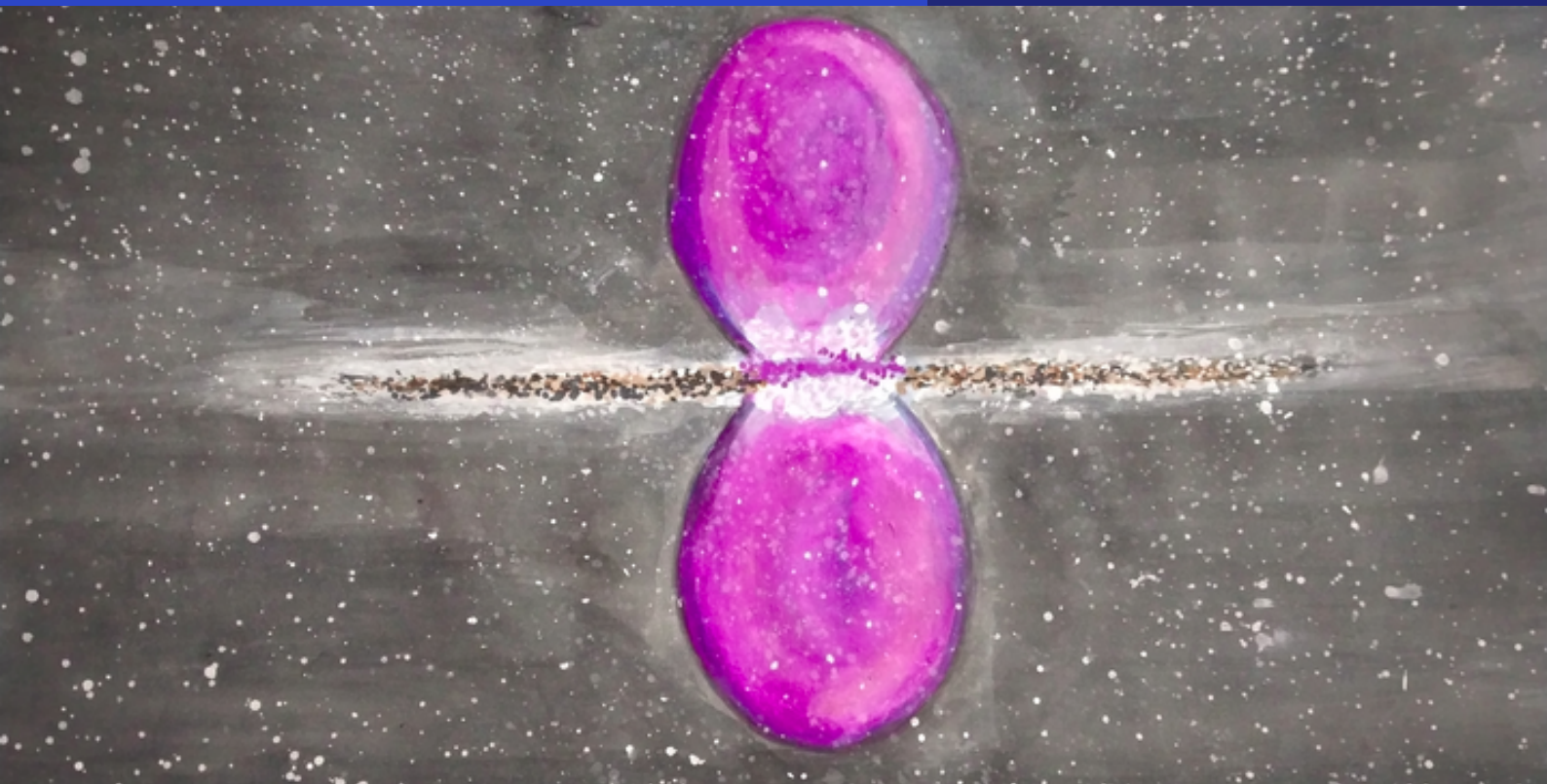
INSPIRON



# WONDERELLA



Never Stop Questioning !



## 01 - FERMI BUBBLE

Space is already as mysterious as it is. What we didn't know was many unusual activities are going on near our own Milky Way Galaxy. Of all these, a spectacular observation was made recently by Fermi lab claiming evidence of two bubbles above and below our home galaxy. It looks precisely like  $dz^2$  orbital (the bubbles representing the electron clouds in the z-axis and milky way residing in the x-y plane). These two giant features are formed due to gamma-ray emission, and the observers claim that most likely they were created by some large episode of energy injection in the rotational centre of the Milky Way galaxy. It is often known as **Galactic centre**, which is nothing but a fancy term for a supermassive black hole named **Sagittarius A** residing in the centre. These blobs or bubbles extend for over 25,000 light-years and are spread evenly. Their peculiar position was what led many astrophysicists to speculate that they are tied to our central black hole.

Now, no one really knows exactly why they are out there. However, many researchers doubt that the fermi bubble was generated by previous stardust activity ruling out this possibility. Their argument is sensible because there is no evidence of massive supernova explosions in the past around 107 years towards or near the galactic centre. What's even more interesting is that ten high-energy neutrinos sourced from the bubbles were also reported, which suggest crazy subatomic interactions making the fermi bubble seem even more mysterious.

### RIVETING READS IN THIS ISSUE:

02 - ROOM TEMPERATURE SUPERCONDUCTIVITY

03 - BUSTING MYTHS ABOUT CANCER

04 - NOBEL PRIZE IN PHYSIOLOGY & MEDICINE

05 - NOBEL PRIZES IN CHEMISTRY



#### References -

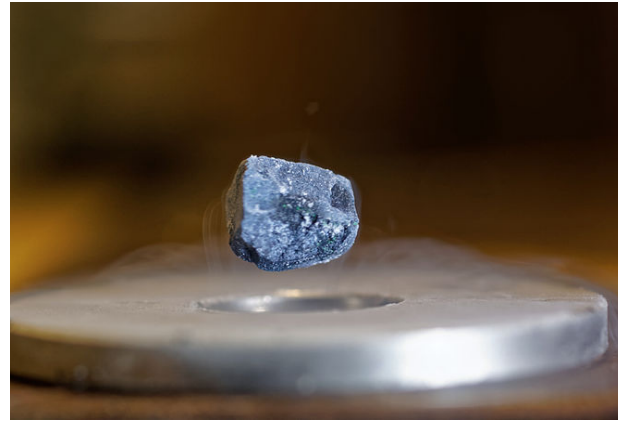
- [Origin of the fermi bubble by KS Cheng, DO Chernyshov, VA Dogiel](#)
- [www.space.com](http://www.space.com)

## 02 - ROOM TEMPERATURE SUPERCONDUCTIVITY

Sometimes referred to as "the Holy Grail of energy efficiency", the phenomenon of superconductivity at normal temperatures can have tremendous implications for how energy is stored and transmitted. Superconducting materials generally have a critical temperature, below which the resistance abruptly drops to zero; this allows electric currents to persist indefinitely without a power source. Achieving this phenomenon at regular temperatures will open up several possibilities, including magnetic levitation trains, high-performance electric motors, power storage devices and magnetic refrigeration.

Until very recently, the highest temperature at which superconductivity could be observed was  $-13.33\text{ }^{\circ}\text{C}$ ; while this is certainly impressive, it is still too low for practical use. On 14th October, a group of scientists based in the United States published an article in the Nature magazine stating that they had achieved room-temperature superconductivity in a carbonaceous sulphur hydride by subjecting it to extremely high pressure. Some of the previously synthesised superconducting materials were compounds of sulphur and hydrogen, and the team thought they could push the critical temperature up further by introducing a third element - carbon. By subjecting the new compound to a wide range of temperatures and pressures, they found that the material became superconducting at a pressure of 267 GPa and a temperature of 287 K ( $13.85\text{ }^{\circ}\text{C}$ ).

While the extremely high pressure required (nearly 75% of the pressure in the Earth's core) make practical applications of this discovery unfeasible, this is certainly a breakthrough that will push more scientists towards the elusive goal of achieving room-temperature superconductivity at ordinary pressures. In the words of Ranga Dias, one of the scientists involved in this discovery, "our discovery will break down these barriers [due to the limits of low temperatures] and open the door to many potential applications"



JULIAN LITZEL (JULLIT31), CC BY-SA 3.0  
VIA WIKIMEDIA COMMONS



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- [www.technologyreview.com/](http://www.technologyreview.com/)
- [www.quantamagazine.org](http://www.quantamagazine.org)

## 03 - BUSTING MYTHS ABOUT CANCER

**Myth: Cancer is contagious.**

**Fact:** Cancer is not contagious. However, some cancers are caused by viruses (some types of human papillomavirus, or HPV, for example) and bacteria (such as *Helicobacter pylori*).

**Myth: If no one in your family has had cancer, you will not get cancer.**

**Fact:** If no one in your family has ever suffered from cancer, it does not guarantee that you will not get cancer. Only 5-10 per cent of the cancers are hereditary.

**Myth: If you have a family history of cancer, you will surely get cancer.**

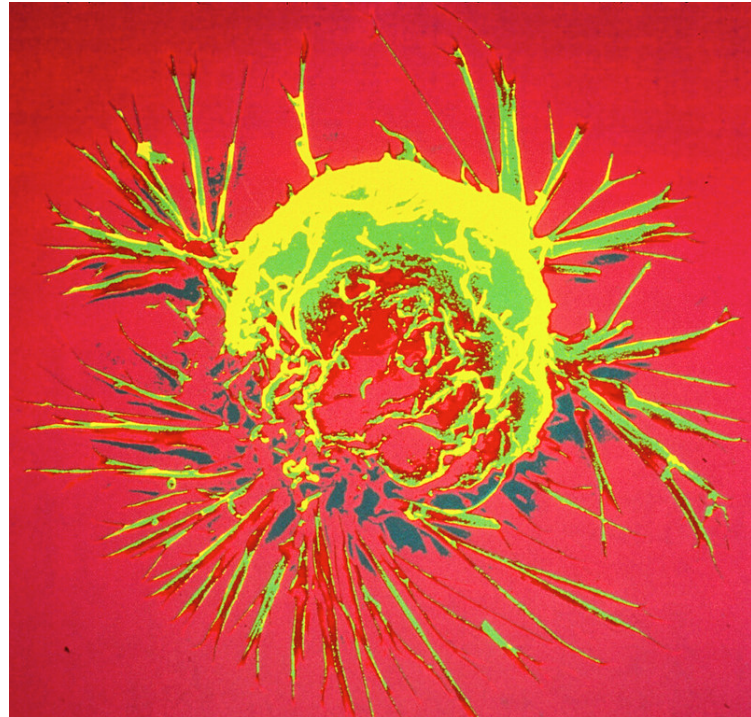
**Fact:** Although having a family history of cancer increases your risk of developing the disease, it is not a definite predictor. Only about 5 to 10 per cent of cancers are caused by harmful mutations that are inherited from a person's parents.

**Myth: Older people are not fit for cancer treatment.**

**Fact:** There is no age limit for cancer treatment. Many elderly patients may respond as well to cancer treatment as younger patients.

**Myth: Artificial sweeteners, flavours, colours, and food additives can cause cancer.**

**Fact:** Researchers have found no evidence that artificial sweeteners, flavours, colours, and food additives cause cancer in humans. However, a high-sugar diet may contribute to excess weight gain, and obesity is associated with an increased risk of developing several types of cancer. For more information, see the NCI fact sheet on Obesity and Cancer.



CREDIT: BRUCE WETZEL AND HARRY SCHAEFER, NATIONAL CANCER INSTITUTE, NATIONAL INSTITUTES OF HEALTHY

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- [www.cancer.gov/about-cancer/causes-prevention/risk/myths](http://www.cancer.gov/about-cancer/causes-prevention/risk/myths)



## 04 - NOBEL PRIZE IN PHYSIOLOGY & MEDICINE

The Nobel prize in physiology or medicine is widely considered to be the highest accolade in modern healthcare for scientific progress through laboratory discoveries in experimental physiology, and it has immense influence in the scientific circle. In 2020, the Nobel prize in physiology or medicine was awarded jointly to Harvey J. Alter, Michael Houghton, and Charles M. Rice for the seminal discovery of the Hepatitis C virus, a landmark achievement in the ongoing battle against viral diseases. Viral hepatitis is an infection that causes liver inflammation and damage caused by different types of viruses including hepatitis viruses A, B, C, D, and E. Hepatitis A and E viruses typically cause acute infections. In contrast, hepatitis B, C, D viruses can cause acute as well as chronic, which leads to liver failure. Person-to-person transmission via the faecal-oral route is the primary means of HAV and HEV, has a short incubation period, and manifests as an acute illness that usually resolves and is followed by life-long immunity. HBV, HCV, HDV spreads through contact with infected blood or other serous bodily fluids and has a long incubation period during which apparently healthy individuals can transmit the disease. The common symptoms of hepatitis are diarrhoea, feeling tired, fever, joint pain, loss of appetite, nausea, pain in the abdomen, vomiting, yellowish eyes and skin, called jaundice, etc. After six years of long intensive research, a single cDNA clone was isolated that was derived from a new flavi-like virus, termed the hepatitis C virus (HCV). Houghton and his co-workers created a collection of cDNA clones derived from different liver and plasma samples obtained from experimentally infected chimpanzees. Arduous work is required to isolate the genetic sequence of the virus. Eventually, a single HCV clone was isolated using a novel, blind immunoscreening method in which investigators used non-A and non-B hepatitis (NANBH) patient's sera to identify cloned viral DNA fragments encoding a viral protein.

The identified clone was named as the Hepatitis C virus belongs to the Flavivirus family. The discovery of the Hepatitis C virus is a milestone achievement that has revolutionized medicines and substantially improved human health. Present novel technologies have developed protective vaccines against HAV & HBV, and effective screening has virtually eliminated the risk of transmission via blood products. Thanks to the pioneering work and outstanding dedication of many years of Alter, Houghton, and Rice. Clinical studies have shown that short-term antiviral treatment cures more than 95% of the patients, including advanced cases who failed to respond to previous therapeutic modalities. This outstanding achievement has already benefited millions of individuals worldwide. For the first time in human history, to foresee a future where the threat of this virus infection is substantially reduced and hopefully soon eliminated.



DR. HARVEY ALTER AT NIH IN THE YEAR 2000.

Source: <https://flic.kr/p/2jQZssr>



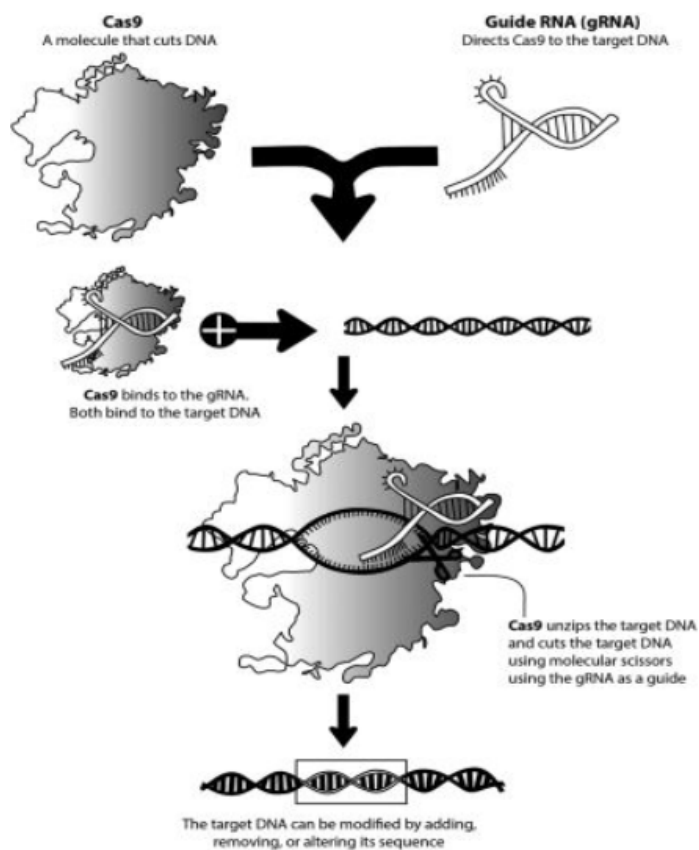
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- [www.nobelprize.org](http://www.nobelprize.org)

## 05 - NOBEL PRIZE IN CHEMISTRY

Have you ever won an award? If yes, the prize always symbolizes special honour, acknowledgement of work, and advocacy of efforts. The Nobel prize is one of the foremost prestigious awards established by the will of the Swedish chemist, engineer, and industrialist Alfred Nobel in 1895 for the excellence in Physics, Chemistry, Physiology or Medicine, Literature, and Peace. These awards are distributed in Stockholm at an annual ceremony on 10 December on the anniversary of Nobel's death. The Royal Swedish Academy of Sciences annually awards the chemistry Nobel prize to the scientist for their outstanding contribution to the various fields of chemical science. Jacobus Henricus van 't Hoff, from the Netherlands, was the first winner of the Nobel prize in Chemistry (1901) for the discovery of the laws of chemical dynamics and osmotic pressure in solutions. Frederick Sanger is the only chemistry Nobel Laureate who has been awarded twice for his work in determining the composition of insulin proteins (1958) and base sequences in nucleic acids (1980). In 2020, this is the first time when two women Emmanuelle Charpentier and Jennifer A. Doudna have jointly won the Nobel prize for the development of the sharpest tool of genome editing, CRISPR Cas-9 genetic scissors. This is an incredible genetic engineering technique based on a bacterial antiviral defence system which is used to edit and manipulate the specific DNA sequences of plants, animals, microorganisms with very high precision. This technology can be used in curing diseases like cancer, blood disorders, blindness, and Alzheimer's disease. This technology is straightforward, time-efficient, and cheap. This can be used to analyze the interaction of genes and the relationship between genetic differences and expression. It can be used to Knock out genes and replace them with another gene for disease therapy. The CRISPR-Cas9 system is amazing, but it has its challenges such as off-target, Cas9 complex can cut at undesirable sites and cause mutation, may result in genomic instability, thereby requiring further research to reduce this hindrance.

Furthermore, the use of this technique needs a legal regulation to avoid engineering organisms that may pose threats to humans, animals, plants and microbes. As of 2020, the prize has been awarded to 185 scientists, among them seven are women. The first hundred years of Nobel prizes for Chemistry show a progressing picture of the development of modern chemistry. It covers the Variety of spectrum of chemical science ranging from theoretical chemistry to biochemistry and several contributions to applied chemistry. Extrapolating the trend of the 20th century Nobel Prizes for Chemistry, it is expected that in the 21st century, theoretical and computational chemistry will develop more with the aid of the expansion of computer technology and artificial intelligence. The Noble prize recognizes as a scientific and literary accomplishment and is considered for the contribution of the greatest benefit to humankind. It motivates the researcher for groundbreaking discovery to transform into a better world. And it is hoped that in the next subsequent years there will be a broader national distribution of Nobel prizes to Laureates.



### PROCEDURE, PRINCIPLE AND MECHANISM OF CRISPR TECHNOLOGY (SCHERZ P 2017).



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- [www.hilarispublisher.com/](http://www.hilarispublisher.com/)
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# FACTASTIC!

*Get ready to guzzle down these interesting facts...*



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## LACRIMAL PUNCTUM

The tiny hole in an eyelid is called lacrimal punctum. They function to collect tears produced by the lacrimal glands. It collects and drains tear through the lacrimal sac connected to the nose .that's why you sniffle when you cry.

## SACCADIC MASKING

You are completely blind for about 40 mins a day. When your eyes move, your brain purposely blocks your vision, which is why you can't see the motion of your eye in a mirror. It's called saccadic masking (also known as (visual) saccadic suppression). Without it, your life would be like watching a constant movie that's filmed with a shaky, handheld camera.



Robert Lawton, CC BY-SA 2.5  
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## SUPERFLUID HELIUM CAN CLIMB WALLS

When helium is cooled a few degrees below its boiling point (-452 degree F or -269 degree C, the lowest temperature possible), it becomes liquid with surprising properties. These include dribbling through molecule-thin cracks, climbing over the walls of the glass container or sides of a dish, and remaining motionless when its container is spun. Helium has become a superfluid (a liquid that flows with zero friction). "If you set [down] a cup with a liquid circulating and you come back 10 minutes later, of course, it has stopped moving," says John Beamish, an experimental physicist at the University of Alberta in Edmonton. Atoms in the liquid will collide with one another and slow down. "But if you did that with helium at low temperature and came back a million years later," he says, "it would still be moving."

Glowing ultrapure helium

Hi-Res Images of Chemical Elements, CC BY 3.0  
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## CALORIC STIMULATION

If the cold water is poured into a person's ear, their eyes showed an involuntary movement called nystagmus, which moves the eye in the direction of the opposite ear.

However, if the warm water is poured into their ear, their eyes will move towards that ear. This is used to test for damage to the brain stem.

Caloric stimulation is a test that uses differences in temperature to diagnose damage to the acoustic nerve (which involves hearing and balance). This test also checks for damage to the brain stem.



Nick Youngson CC BY-SA 3.0  
Alpha Stock Images

## ELECTRIC SPIDERS?

Spiders can use Earth's electric field to fly through the air. Spiders extrude a strand of silk into the air that picks up a negative charge and repels the ground, sending them flying, which is termed as "ballooning." It allows the arachnids to use strands of silk to float up to three miles above the Earth's surface and 1,000 miles out to sea. Charles Darwin first observed the flight of spiders aboard the HMS Beagle in 1832. He noticed the ship was covered in webs at sea and found tiny spiders. "I caught some of the Aeronaut spiders which must have come at least 60 miles," was also mentioned in his diary.

<https://flic.kr/p/9j6FbE>

## EFFICIENCY AT ITS BEST

The radio signal that a spacecraft uses to contact Earth has no more power than a refrigerator light bulb. And by the time the signal has traveled across space, the signal is only one-billionth of one-billionth of one watt!



NASA, ESA, and G. Bacon (STScI), CC BY 4.0  
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Fact Finder

**MRUNAL**

# The Quizopedia



-ARE YOU READY FOR THE CHALLENGE?

Competition begins on: November 2, 2020, at midnight  
Last Date for Submission: November 20, 2020



Is your mind slowly going stale? Did you pride yourself on being the 'Know-it-all' in your class? Well, here's a chance to flex your grey cells and bring them back to tip-top shape. KNOWBEL presents to you 'Quizopedia'. I, Aditya, the quizmaster, have selected 11 of the most sizzling questions for you to crack. All of the questions are related to the theme of this month's issue.

*Check out the instructions below:*

The QR code below will take you to a Google Form, which contains a quiz consisting of 11 questions. You must answer all the questions and try to get them correct. This time, in an attempt to make the quiz more exciting, some of them are without options. You are free to make wild guesses as there is no negative marking! However, don't even try cheating as it would not help you reach the answer in any way! The names of the winners would be published in the upcoming issue, and the winner of the contest will receive prizes worth Rs. 250. Answers shall be officially released via mail on **November 25, 2020**.

The winners would be chosen based upon:

1. Number of Correct Answers
2. Time of Submission

**Scan or click on the QR code below:**



10th Quizzo winner

Nisha Ganesh Dhone

College of Agriculture  
Engineering and  
Technology, Akola



What are you waiting for? Let's get quizzing!

1. Starting off with a 10 marker! Name as many Indian Nobel prize winners as you can. (People who were born in India but were citizens of other nations while winning the prize DO count)



2. The first person on this short and rather unusual list of Nobel prize winners is Swedish poet Erik Axel Karlfeldt while the last person is Canadian physician Ralph M. Steinman. What unusual premise are we talking about here?

3. Which family is the most successful when it comes to the number of awarded Nobel Prizes?

- a) The Bohr's
- b) The Curie's
- c) The Einstein's



4. X was awarded the Nobel Prize in 1991 but was not able to accept it in person because she had been put under house arrest. X delivered her speech more than two decades later in 2012. Identify X.

5. Connect the following people (with respect to the Nobel prize):

- a) All three won the Nobel prize more than once.
- b) All three were the first winners in their respective categories.
- c) These three were the first trio to share a Nobel prize.



6. Geir Lundestad, Secretary of Norwegian Nobel Committee in 2006, said, "The greatest omission in our 106-year history is that X never received the Nobel Peace prize. X could do without the Nobel prize. Whether Nobel committee can do without X is the question". In the year of X's death, the Nobel Committee declined to award the prize on the grounds that "there was no suitable living candidate" that year. Identify X.

7. Only one organization has been awarded the Nobel Prize three times.

Which one?

- a) The International Committee of the Red Cross
- b) Amnesty International
- c) United Nations High Commissioner for Refugees

8. The Nobel Peace Prize Concert has been held annually since 1994 to honor the Nobel Peace Prize laureate. The 2014 Nobel Peace Prize Concert featured X and his sons Y and Z perform the 'Raga for Peace.' The performance video is on Youtube and has been watched more than a million times. Identify X.



9. What is the full form of CRISPR?

- a) Clustered Regularly Interspaced Short Palindromic Repeats
- b) Combined Regulation of Integrated Systematic Polynucleotide Riboses
- c) Critical Response to Inter Specific Polynucleotide Rings

10. The unique musky smell that we associate with incoming rain is a result of the production of a special kind of molecule called X by Streptomyces bacteria in the soil that then seeps into the soil giving rise to that specific odor. Identify X.



11. The new Feluda test for detecting SARS-COV derives its name from?

- a) A fictional character from Satyajit Ray's novels
- b) A special kind of Falooda
- c) The names of the developers of the tests



## &lt; D/CODE &gt;

THERE IS ONLY ONE TRUTH !  
BRING OUT THE SHERLOCK IN YOU.

Are you rooting to challenge your brain in this seemingly endless lockdown? Well, we have just the right thing for you. KNOWBEL presents a revamped version of your favourite D-code. Gear up to send your neurons on a marathon.

To begin, click on the start button below. There are 5 documents, one leading to another with a clue to open it. You have to submit the final answer, a code given in the final document, at the submission link. Remember, don't give up midway because the solution is staring at you in the face.

Conquistadors will be **honoured** with fantastic **prizes** worth **Rs.250** and **certificates**. Besides, you will get a chance to be featured in our next issue.

The answers will be sent to you by **25/11/2020**. The enthralling **competition begins** on **02/11/2020**. **Hints** would be given out after **5 days** from the **start** of the competition on the official **KNOWBEL website**

here : **HINTS**

The final winners will be chosen on the following basis:

- 1) Your answers (obviously!)
- 2) Logic
- 3) Preference for early-bird submissions

**The Deadline for entering your answers is 25/11/2020.**

Now, are you ready to EODCD? 😜

Click on **START** to begin.

**Winners of  
<D/code> - 9 are:**

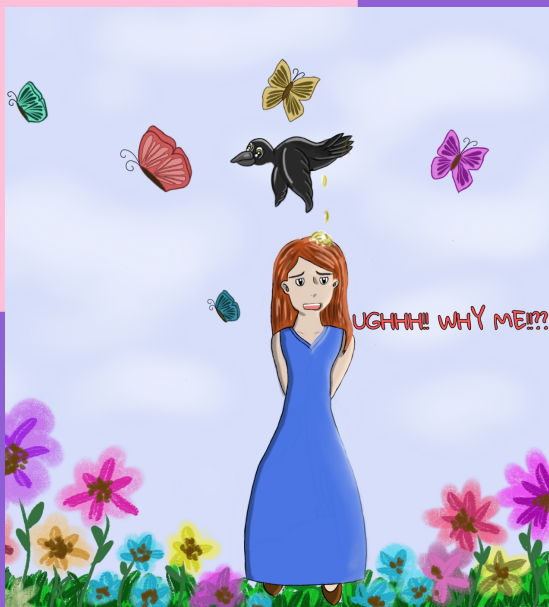
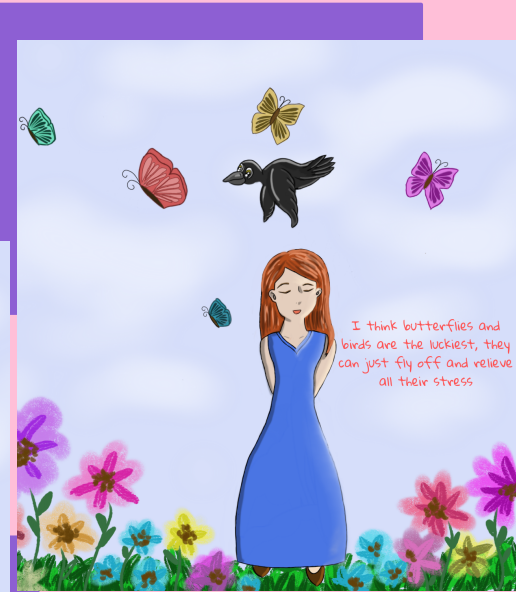
1. Vaidai Jambhule
2. Chinmay Kale

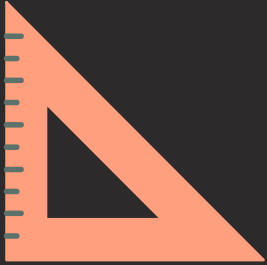
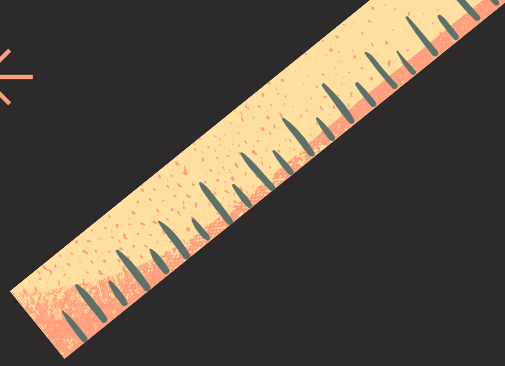
**START**

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# PLOT-TWIST

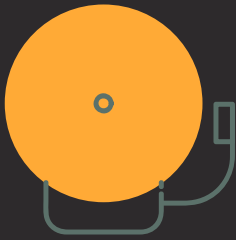
By Aishwarya Juneja





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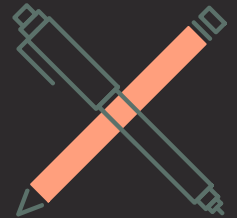
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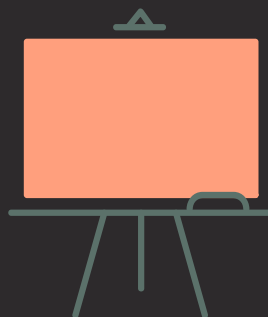


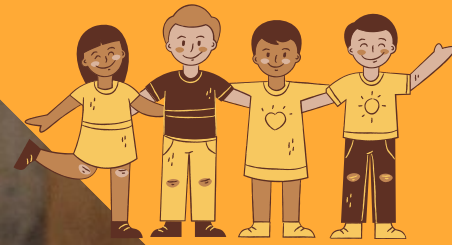
# INSPIRON



Sindhutai Sapkal

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President's Secretariat (GODL-India), GODL-India, via Wikimedia Commons

According to UNICEF, almost 10,000 children become orphans every day. According to internationally accepted figures, there are at least 140 million orphans in the world. India, particularly, needs to take urgent action in this regard as the official figures put the number of orphans at 31 million. In India, only 41% of births are registered, with diseases and outbreaks caused by social inequality, poverty and other social problems that arise due to the strict caste system being considered the primary reason for the high population of orphans in the country. Amidst these dark clouds emerged a ray of hope who worked tirelessly to banish the prevalent disparity. It was none other than Sindhutai Sapkal, fondly known as the 'Mother of Orphans'

## 01. HARROWING CHILDHOOD

Born on November 14, 1948, in a cattle-grazing family in Maharashtra's Wardha district, she was ungraciously called 'Chindhi', which means 'torn piece of cloth' in Marathi. Much against the wishes of her mother, her father was keen on getting her educated. Under the pretext of grazing cattle, he used to send her to school secretly. The family could not afford a slate and Sindhutai used to write on the leaf of a Bharadi tree. Miserable poverty, family responsibilities and an early marriage forced her to quit formal education after she successfully passed the fourth grade.

## 02. UNENDING STRUGGLES

At the tender age of ten, she was married off to a man twenty years her senior. Despite being fettered by the shackles of child marriage, young Sindhutai never lost hope.

WITHIN THESE PAGES:

**01 HARROWING CHILDHOOD**

**02 UNENDING STRUGGLES**

**03 BATTLING FOR SUBSISTENCE**

**04 SELFLESSNESS PERSONIFIED**

**05 MAAI**

**06 ETERNAL SUPPORT**



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“

*You have  
two hands  
one to help  
yourself  
and second  
to help  
others . . . !*

”

By contrast, her passion for helping the helpless and victimised aggravated. Settling in the Navargaon forest in Wardha after her marriage, she strongly opposed the exploitation of village women, who collected cow dung, by the Forest department and the Landlords in 1972. Little did she know that her fight would change her life for the worse.

### 03. BATTLING FOR SUBSISTENCE

During her pregnancy, a nasty rumour of infidelity was spread by an angry landlord. Naively, her community shunned and isolated her. Even her husband abandoned her. Beaten, she gave birth to her daughter Mamta on October 14, 1973, in a cowshed. Sindhutai went back to her maternal home, but there too, she faced a hostile rejection from her mother. Feeling lost and betrayed, Sindhutai started singing and begging in trains and on the streets to make ends meet. Making train stations, cowsheds and cemeteries her home, she continued to fight for herself and her daughter's existence. She feared being picked up by men at night and often spent them at cemeteries. Such was her condition that people began calling her a ghost.

### 04. SELFLESSNESS PERSONIFIED

Eventually, she found herself in Chikaldara, in the Amravati district of Maharashtra. Here, due to a tiger preservation project, 84 tribal villages were evacuated. Amidst the confusion, a project officer impounded 132 cows of Adivasi villagers, and one of the cows died.



President's Secretariat (GODL-India), GODL-India, via Wikimedia Commons

This stimulated Sindhutai, and she decided to fight for proper rehabilitation of the defenceless tribal villagers. The Minister of Forests acknowledged her efforts, and he made appropriate arrangements for alternative relocation. When Prime Minister Indira Gandhi arrived to inaugurate the tiger project, Sindhutai showed her photographs of an Adivasi who had lost his eyes to a wild bear. He is quoted as saying, "I told her that the forest department paid compensation if a wild animal killed a cow or a hen, so why not a human being? She immediately ordered compensation." After coming to know of the plight of abandoned Adivasi children, Sapkal took care of them in return for meagre amounts of food. Thereon, it became the mission of her life.

## 05. MAAI

During these experiences of poverty, abjection and homelessness, Sindhutai came across several vulnerable orphans and women who were blatantly ignored by society. She began adopting these orphans and worked for their welfare. Sometimes, she was forced to beg to feed them. To avoid partiality towards her biological daughter, Sindhutai sent her daughter to an organisation in Pune. After years of hard work, she raised her first Ashram at Chikaldara. She travelled across villages and cities to raise money for her Ashrams. Many a time, she even had to fight for their next meal. But Sindhutai never ceased her efforts.

“

*Do not be afraid of small crisis, just keep going, learn to befriend the crisis.*

”



“

*If you don't  
want to live for  
yourself, then  
learn to live for  
others.*

”



<http://ckpally.tripod.com/mother/>

Till date, she has adopted and nurtured over 1200 orphaned children who affectionately call her 'Maai'. Many of her adopted children have reached great heights, and today, her biological daughter and the adopted children carry forward her legacy and run orphanages of their own.

## 06. ETERNAL SUPPORT

Sindhutai Sapkal has received more than 270 awards from various national and international organisations. A Marathi film titled 'Mee Sindhutai Sapkal' was released in 2010 to honour her commendable work. She has a grand family of 207 sons-in-law, thirty-six daughters-in-law, and over a thousand grandchildren. She has founded numerous organisations across Maharashtra which provide education and shelter to thousands of orphans. At the age of 70, Sapkal's husband came to her apologetically. She accepted him as her child. Even today, Sindhutai Sapkal works relentlessly to shape the future of these orphans because she firmly believes that every child counts towards the development of our nation.



KNOWBEL

# BREAST CANCER AWARENESS MONTH

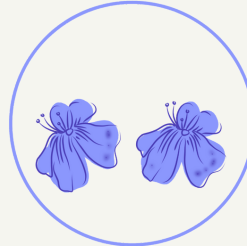
Breast cancer is the most common cancer in women worldwide. Knowing it exists is not enough. Get yourself checked and be your own hero.



Nipple Discharge



Lumping or Thickening

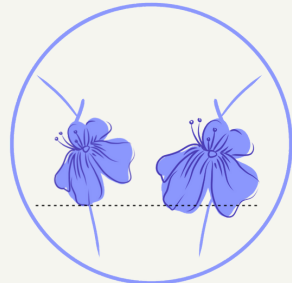


Dimpling

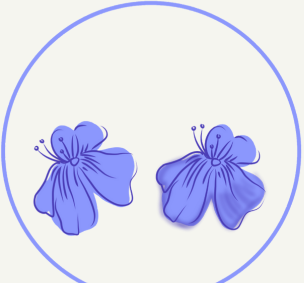


Visible Lump

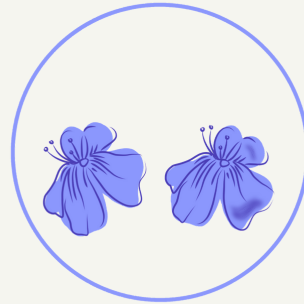
*Be your own hero*



Pulled in nipple



Skin texture change



Skin irritation



Armpit pain



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